RECORD OF DECISION

EPA
REGION 6

OLD MIDLAND PRODUCTS

REMEDIAL ALTERNATIVE SELECTION

The abandoned Old Midland Products site is located near the city of Ola, Arkansas in Yell County. From 1969 to 1979, a creosote and pentachlorophenol wood preserving plant and sawmill were operated at the site.

Investigations show contamination present in surface soils, lagoon sludges, and on-site drainageway sediments. The lagoon area, used to store spent treatment fluid, broached an underlying clay formation into the weathered shale. This facilitated localized ground water contamination with a lighter-than-water oil phase.

Several potential remedies were evaluated against the requirements of the Superfund Amendments and Reauthorization Act of 1986. After presenting proposed remedies for public review, EPA has selected the options entailing on-site incineration of contaminated soils, sediments, and sludges; and an accelerated pumping and treating of the contaminated ground water.

DECLARATION FOR THE RECORD OF DECISION

SITE NAME AND LOCATION

Old Midland Products, Yell County, Arkansas

STATEMENT OF PURPOSE

This decision document presents the selected remedial action for this site developed in accordance with Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and the National Contingency Plan (40 CFR Part 300).

The State of Arkansas has concurred on the selected remedy. (Letter attached)

STATEMENT OF BASIS

This decision is based upon the administrative record for the Old Midland Superfund Site [index attached]. The attached index identifies the items which comprise the administrative record upon which the selection of a remedial action is based.

DESCRIPTION OF THE SELECTED REMEDY

The major components of the selected remedy include:

- On-site thermal destruction of the contaminated surface soils, lagoon sludges, and drainageway sediments. The soils, sludges, and sediments will be cleaned to a level of 1 ppm total pentachlorophenol (PCP).
- Placement of the clean ash on the site. Covering the ash with a vegetated soil layer.
- Collection and onsite treatment, using carbon adsorption, of the contaminated lagoon water and groundwater.

DECLARATION

The selected remedy is protective of human health and the environment, attains Federal and State requirements that are applicable or relevant and appropriate and is cost-effective. The remedy satisfies the statutory preference for remedies that employ treatment which permanently and significantly reduces the toxicity, mobility, or volume of hazardous substances as their principle element. Finally it is determined that this remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable.

March 24, 1988
Date

Robert E. Layton Jr.
Robert E. Layton Jr., P.E.
Regional Administrator

Summary of Remedial Alternative Selection
Old Midland Products Site
Yell County, Arkansas
February, 1988

I. SITE LOCATION AND DESCRIPTION

The Old Midland Products site is an abandoned creosote and pentachlorophenol wood preserving plant and sawmill located near Ola, Arkansas in Yell County (Figure 1). The site borders the north right-of-way of Highway 10 and extends north to the southern right-of-way of Old Highway 10. The site is flat (2-3% slope) with a total area of about 37 acres. Areas of concern include 7 process lagoons and a treatment building. The process lagoons range in area from 125 to 7200 square feet with depths from 3.5 feet to 6 feet (See Figure 1). Most surface runoff is to an on-site intermittent stream. The stream flows into the Petit Jean Wildlife Management Area about three-fourths of a mile downstream. Repeated tests show that the wildlife management area is not significantly affected, if at all, by the site.

Site History

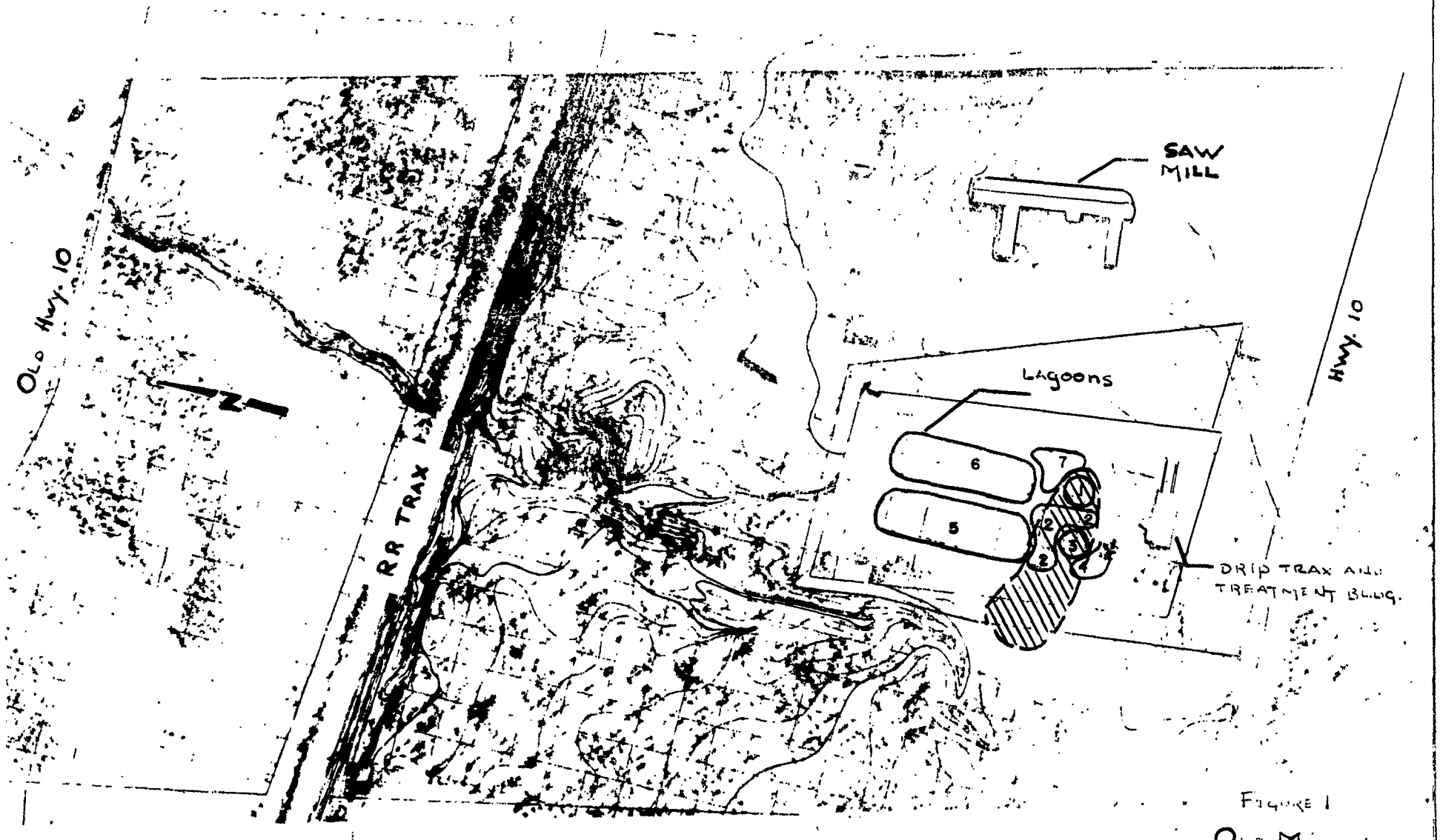
Old Midland Products is known to have been in operation from 1969 to 1979 as a wood preserving plant. However, the Environmental Protection Agency (EPA) aerial photos indicate that the sawmill might have been in operation as early as 1960. Operations included treating wood with creosote and pentachlorophenol (PCP) to preserve the wood from bacterial and insect degradation. The chemicals were generally forced into the wood under pressure resulting in the release of lignin and tannin based chemicals from the wood. The treated wood was probably allowed to dry in open areas to the east and west of the lagoons and treatment building. Effluent from the treatment process containing PCP and polynuclear aromatic compounds (PNAs) were discharged into Lagoons 1 or 3 (see figure 1) and other lagoons via a moveable discharge pipe. Pond overflows have occurred with drainage to the intermittent stream west of the lagoons.

The land, originally owned by the Old Midland Products Company, was sold in 1979 to the Plainview-Ola Economic Trust Inc. The First State Bank of Plainview is the lien holder for the Old Midland Products Co.

On December 10, 1983, the site was ranked by EPA and the Arkansas Department of Pollution Control and Ecology (ADPCE) for consideration as a Superfund site. Based on hazards posed by the lagoons and contaminated soils the site was included on the second update of the National Priorities List on July 16, 1984 with a Hazard Ranking Score of 30.77.

Geology/Hydrogeology

The site is in the center of the Arkansas Valley and the Ouachita Mountains regions. Geology of Yell County is dominated by outcrops of the lower and middle Atoka Formation of the Pennsylvanian Age. The Atoka



LEGEND

- PROPERTY LINE
- CHAIN LINK FENCE
- BARBED WIRE FENCE
- CONTOUR LINE
- CHAIN LINK FENCE NEW
- DISCOLORED SOIL AREA

OLD MIDLANDS PRODUCTS SITE

OLA, ARKANSAS

GW - GROUNDWATER PLUME

FIGURE 1

OLD MIDLAND PRODUCTS

MARCH, 1988

Formation consists primarily of interbedded gray/black shale and brownish gray sandstone and siltstone. In the site vicinity the Atoka Formation may be several thousand feet thick, with the shale constituting about three-fourths of the thickness. The upper forty feet of soil/rock at the site contain (in order of descending depth) silty clay down to about 15 feet, a layer of iron nodules less than 6" thick and a layer of weathered shale about 20 feet thick. Below these layers an unweathered or slightly weathered (but fractured) shale goes down thousands of feet.

The weathered and unweathered shale layers represent a single water bearing zone. Groundwater in the area occurs under Artesian conditions and flows through fractures, faults, bedding planes and weatered zones. The shallowest water producing intervals occur in the weathered shale at depths of 15 to 20 feet in a zone 3 to 5 feet thick.

The weathered shale, as well as the surface topography, slope to the north-northwest. The hydraulic gradient slopes to the northwest with a magnitude of 0.02 to 0.34 feet/foot. In general, groundwater movement follows the general slope of the area water table. However, the contaminant plume initially flows against this slope (see figure 1), apparently following a fold, fault or channel, then is redirected to follow the general water table of the area.

Five local water supply wells have been identified within 1500 feet of the site. Well depths range from 80 to almost 300 feet. These five wells, and the city of Ola water well, were sampled. The results showed those wells were free from site related contaminants. The closest well is located approximately 450 feet west-northwest of the lagoons at a reported depth of 80 feet. The water bearing zone is then classified as being a potential source of water for beneficial use (Class II B). Remediation levels will reflect such.

Remedial Investigation Results

A remedial investigation (RI) was conducted at the Old Midland Products site from April 1985 to November 1987. During the RI, samples were collected from soil, sediments, sludges, air, surface water and ground water to characterize the contamination, define the extent of contamination and estimate the volume of contamination present at the site. In addition, data were collected to characterize the hydrogeology, hydrology, demography, and ecology of the site and area to allow assessment of potential contaminant migration and risk to public health and the environment.

During the RI, four deep (40 feet) and eight shallow (20 feet) groundwater monitoring wells were installed. Six deep (40 feet) and eight shallow (20 feet) piezometers were installed to monitor groundwater elevations and hydraulic gradients. Soil boring samples were collected during the installation of the monitoring wells and piezometers and at 2 additional 40 feet deep holes and 9 additional 18 foot deep holes.

Three exploratory trenches approximately 20 feet deep were dug a total of 540 linear feet to further characterize the site's shallow geology. Permeability was measured with 23 in-situ falling head tests

and 15 laboratory falling head tests. Twenty-one soil particle size analyses were performed. Sludge and water samples from each of the seven lagoons, 22 sediment samples from the intermittent stream, 37 groundwater samples, 72 soil boring samples, and 138 surface/subsurface soil samples were all chemically analyzed. An air analysis station was placed onsite and was used to monitor site meteorological conditions for one year. A pumping and recovery test was completed on the shallow groundwater bearing zone.

A lagoon sludge stabilization test was completed and carbon treatability tests were performed on lagoon water and groundwater.

Findings of the Remedial Investigation

Pentachlorophenol (PCP) is the most widespread contaminant at the site followed by polynuclear aromatics (PNAs). Chlorinated dibenzo dioxins and furans are present in the more concentrated wastes (such as lagoon sludges and nonaqueous phase liquid). However, the established clean up levels would treat them sufficiently. Trace levels of aromatic hydrocarbons were also detected, although of limited spatial extent and at concentrations that present no significant health or environmental threats.

PCP was present in surface (0"-6") soil, subsurface (6-12") soil, deeper soil (down to water bearing zone), drainageway sediments, surface water, groundwater; lagoon sediments, and lagoon fluids. PNAs were detected in surface soil, subsurface soil, deeper soil, drainageway sediments, ground water, lagoon sediments, and lagoon fluids.

Table 1 presents the maximum PCP concentrations observed and the maximum concentration of a specific PNA observed per media.

Soil contamination is limited to the area around the lagoons and treatment building and the soil beneath the lagoons. Drainageway sediments were contaminated at concentrations from 1 to 10 ppm PCP from near the northwest perimeter of the lagoon area downstream to south of Old Highway 10, an estimated distance of 1,680 feet. No significant contamination was observed in offsite drainageway sediments.

Groundwater contamination is limited to the shallow ground water. Contamination appears to be made up of a lighter-than-water nonaqueous phase liquid, that covers an estimated area of 24,000 square feet. Under static, nonpumping conditions most of the groundwater contamination is within the upper 20 feet of soil/rock. No indications of deeper contamination were observed. Figure 2 illustrates the estimated areal extent of groundwater contamination.

There is estimated to be approximately 9,000 to 21,000 cubic yards of contaminated soil. The range is due to the uncertainty in depth of contamination beneath the lagoons. There are approximately 850 cubic yards of contaminated drainage sediments. Approximately 450,000 gallons of groundwater are contaminated, as are about 620,000 gallons of lagoon fluids. The contaminated lagoon sludges measure approximately 2,770 cubic yards.

Table 1. Maximum Detected Concentrations (in parts per million)

MEDIA	MAXIMUM PCP	MAXIMUM PNAs
Surface soil (0-6 in)	790	14,000
Subsurface soil (6-12 in)	690	220
Deeper soil (1-20 ft)	0.32	270
Drainageway sediment	9.5	6.6
Surface water	0.012	not found
Groundwater, oil phase	12,000	5,100
Lagoon sludges	5,900	38,000
Lagoon fluids	0.6	2.2

NOTE: PNAs refers to a wide variety of compounds. Some, such as phenanthene, are not harmful. Some, such as benzo(a)anthracene, are carinogenic.

Potential Impact of Site Contaminants on Human Health and the Environment

The environmental fate and transport of PNAs and PCP was assessed based on the physical and chemical characteristics of these contaminants and the geological and topographical characteristics of the site.

PNAs, due to their low water solubility (thus non-leachable), high octanol/water partition coefficient, high soil adsorption coefficients, and resistance to oxidation or hydrolysis make them highly immobile in soils. Their low vapor pressure indicates they will not volatilize. Therefore, migration of PNAs is expected to be extremely limited.

There is little information on the transport of PCP through the environment. The compound has a low vapor pressure and therefore is not likely to volatilize readily. It is slightly soluble in water and adsorbs to sediments and soil, and therefore may be transported by soil and drainageway sediments.

The site presents potential current and future risks to public health and the environment if no actions are implemented. The lighter-than-water nonaqueous phase liquid plume in the shallow groundwater, direct contact with surface contaminants and the leaching of contaminants from lagoon sediments into the groundwater represent the primary risks. These risks can be mitigated through treatment of contaminated soils, lagoon liquids, sludges, and contaminated groundwater.

II. ENFORCEMENT

The enforcement goal for the EPA is to have those parties responsible for the site contamination pay for the cleanup of the site. At least one Potential Responsible Party (PRP) has been identified and the Agency presently is searching for additional parties. Any PRPs would be notified that they may undertake or participate in the chosen remedy. If they decline involvement in the remedial action, EPA will fund the design and implementation of the selected remedy. A cost recovery enforcement action will be pursued at a later date.

III. COMMUNITY RELATIONS HISTORY

Initial community interest in the Old Midland Products site was high, due in part to the cost of the remedial investigation/feasibility study and the length of time before actual cleanup could begin. Approximately 35 people attended a public meeting in May 1986. Both EPA and the Arkansas Department of Pollution Control and Ecology explained the Superfund process, outlined the activities planned for the remedial investigation, and responded to the citizen's concerns.

Upon completion of the feasibility study a public notice was released on November 16, 1987. This notice summarized the various alternatives, highlighted the proposed plan, announced the public comment period of November 27 through December 31, 1987, and invited the public to a meeting on December 9. Media coverage of this notice appeared in the

Dardanell Post-Dispatch, Arkansas Gazette, and Arkansas Democrat. A fact sheet was mailed to 85 area residents, local officials, and interested citizens. Extra copies of all relevant documents are available in the Yell County Courthouse, and Ola Community Center. Posters announcing the public meeting were sent to all area businesses, churches, and the Community Center.

Approximately 20 people attended the public meeting on December 9th. There was no opposition expressed at the meeting or during the comment period to EPA's proposed plan for onsite incineration and accelerated recovery wells. Responses to the questions/comments received during the comment period are outlined in Appendix A entitled Responsiveness Summary.

IV. ALTERNATIVES EVALUATION

A. Evaluation Criteria

Section 121(a) through (f) of the Superfund Amendments and Reauthorization Act (SARA) contains factors which EPA must consider in selecting a remedy for a Superfund site. Section 121(b)1 of SARA states a preference for certain items: EPA is directed to look at alternative treatment technologies, the final selection is a remedial activity which is protective of human health and the environment. "Remedial actions in which treatment which permanently and significantly reduces the volume, toxicity, or mobility of the hazardous substance as a principal element, are to be preferred over remedial actions not involving such treatment. The offsite transport and disposal of hazardous substances or contaminated materials without such treatment should be the least favored alternative remedial action where practicable treatment technologies are available."

These factors, as well as other criteria used during the evaluation of alternatives, are discussed below:

1. Consistency with Other Environmental Laws - Compliance with ARARs

   In determining appropriate remedial actions at Superfund sites, consideration must be given to the requirements of the various Federal and state environmental laws, in addition to CERCLA as amended by SARA. Primary consideration is given to attaining applicable or relevant and appropriate Federal and State public health and environmental regulations and standards, commonly referred to as ARARs (Applicable or Relevant and Appropriate Regulations). While many State and Federal laws may not be legally applicable to the proposed remedy, they must be evaluated to determine if the whole, or a portion, are relevant and appropriate.

2. Reduction of Toxicity, Mobility or Volume

   The degree to which alternatives employ treatment that reduces toxicity, mobility, or volume must also be assessed. Relevant factors are:

- o The treatment processes the remedies employ and materials they will treat;
- o The amount of hazardous materials that will be destroyed or treated;
- o The degree of expected reduction in toxicity, mobility, or volume;
- o The residuals that will remain following treatment, considering the persistence, toxicity, mobility, and propensity for bioaccumulation of such hazardous substances and their constituents.

3. Short-term Effectiveness

The short-term effectiveness of alternatives must be assessed considering appropriate factors among the following:

- o Magnitude of reduction of existing risks;
- o Short-term risks that might be posed to the community, workers, or the environment during implementation of an alternative including potential threats to human health and the environment associated with excavation, transportation, and redisposal or containment;
- o Time until full protection is achieved.

4. Long-term Effectiveness and Permanence

Alternatives are assessed for the long-term effectiveness and permanence they afford along with the degree of certainty that the remedy will prove successful. Factors considered are:

- o Magnitude of residual risks in terms of amounts and concentrations of waste remaining following implementation of a remedial action, considering the persistence, toxicity, mobility, and propensity for bioaccumulation of such hazardous substances and their constituents;
- o The degree to which the treatment is irreversible;
- o Type and degree of long-term management required, including monitoring and operation and maintenance;
- o Potential for exposure of human and environmental receptors to remaining waste considering the potential threat to human health and the environment associated with excavation, transportation, redisposal, or containment;

- o Long-term reliability of the engineering and institutional controls, including uncertainties associated with land disposal of untreated wastes and residuals;

- o Potential need for replacement of the remedy.

5. Implementability

The ease or difficulty of implementing the alternatives are assessed by considering the following types of factors:

- o Degree of difficulty associated with constructing the technology;

- o Expected operational reliability of the technologies;

- o Need to coordinate with and obtain necessary approvals and permits (e.g., NPDES, dredge and fill permits for off-site actions) from other offices and agencies;

- o Availability of necessary equipment and specialists;

- o Available capacity and location of needed treatment, storage, and disposal services.

6. Cost

The types of costs that should be assessed include the following:

- o Capital cost;

- o Operation and maintenance costs;

- o Net present value of capital and O & M costs;

- o Potential future remedial action costs.

7. Community Acceptance

This assessment examines:

- o Components of the alternatives that the community supports;

- o Features of the alternatives about which the community has reservations;

- o Elements of the alternatives which the community strongly opposes.

8. State Acceptance

Evaluation factors include assessments of:

- o Components of the alternatives the State supports;
- o Features of the alternatives about which the State has reservations;
- o Elements of the alternatives under consideration that the State strongly opposes.

9. Overall Protection of Human Health and the Environment

Following the analysis of the remedial options against individual evaluation criteria, the alternatives are assessed from the standpoint of whether they provide adequate protection of human health and the environment considering the multiple criteria.

B. Description of Alternatives

Based on appearance and past site operations, the following structures will be treated as contaminated with PCP and/or PNAs: yard offices A and B, storage trailer, maintenance shop, wood storage shed, treatment building, tanks A through E, and portions of the interior of the sawmill.

All these contaminated areas are addressed by this Record of Decision. The conditions at the site dictated looking at alternatives to address the site as two problems: (1) source control-cleaning the surface soils, drainageway sediments, and lagoon water and sludges; (2) ground water.

In conformance with EPA regulation, 40 CFR Part 300, also known as the National Contingency Plan, the universe of possible applicable technologies was screened to determine whether they might be appropriate for this site. (See the Feasibility Study for details of this evaluation). This set of possible technologies was then screened based on existing site wastes and conditions, and their ability to minimize long term threat to human health and the environment. The protection of workers working onsite was also considered. This process highlighted 23 available technologies. Then, from these 23 possible technologies, six source control and five groundwater alternatives were chosen for more detailed evaluation and comparison with respect to the nine remedy selection criteria outlined above. The source control and groundwater remedies were evaluated separately but they will be implemented concurrently.

Certain actions are common to all alternatives. For example, all existing monitor wells, peizometers and water wells on the site were assumed to be plugged and abandoned for cost estimating purposes except for monitor well MW-1s. This well will be retained to provide an upgradient well for post-remediation monitoring. The remedial action and any possible future use of the site would present a risk of damaging the wells. Plugging and abandonment of the wells will eliminate the risk of damage to the integrity of the well seal and casing with the consequent risk of contamination of the aquifer through the damaged well.

C. SOURCE CONTROL ALTERNATIVES

As part of the source control alternatives, a carbon adsorption treatment system will be used for decontaminating the liquid wastes for all alternatives except alternative I, which does not include any treatment, and alternative VI, which recommends using UV/ Ozonation.

The recovered oil from the oil-water separator will be sent to a hazardous waste incinerator. The carbon will either be regenerated or disposed of as residue from hazardous waste treatment unit.

ALTERNATIVE I, NO ACTION - This alternative consists primarily of restricting public access to the contaminated areas and monitoring the site. The existing fence would be maintained and warning signs would be installed. The site monitoring will involve periodic air and groundwater sampling and analysis. This action would continue for at least 30 years.

ALTERNATIVE II, CONTAINMENT - This alternative involves in-situ solidification of lagoon wastes; excavation of drainageway sediments, solidification of drainage sediments if necessary, and placement of drainage sediments in lagoons; then construction of a surface cap designed to meet all pertinent regulations and statutes. Approximately 998,000 gallons of contaminated stormwater runoff during construction and 620,000 gallons of lagoon liquids, would be collected, treated, and discharged. Any liquid discharges would be sent to the onsite stream. The discharged water would conform to applicable or relevant and appropriate standards.

ALTERNATIVE III, ONSITE LANDFILL - Since there is adequate space available, a landfill could be located on site. The landfill would have protective top and bottom liners which satisfy all requirements and are protective of human health and the environment. The site wastes (surface soils, sediments, and sludges) would be stabilized then placed in the landfill. The lagoon liquids would be collected, treated, and discharged. The discharged water would conform to applicable or relevant and appropriate standards.

ALTERNATIVE IV, ONSITE BIOLOGICAL TREATMENT - Alternative IV involves onsite biotreatment of wastes using a combination of a liquid/solids contact reactor and land treatment technologies. The reactor would be used for the concentrated wastes (lagoon sediments) and landfarming would be applied to the less contaminated soils and drainageway sediments. An integral part of this remedial action would be securing a waiver to the RCRA Land Ban as it impacts the proposed landfarming operation. The lagoon liquids would be collected, treated and discharged. The discharged water would conform to applicable or relevant and appropriate standards. This action could require monitoring for up to 30 years.

ALTERNATIVE V, ONSITE INCINERATION - Alternative V is composed of bringing to the site a transportable incinerator to destroy the wastes. All soils, sediments and sludges contaminated with greater than 1 ppm PCP, would be treated and returned to the site, as an ash. The ash will be tested to insure it meets the clean-up standards described on

page 6. As with all source control remedies, except no action, the lagoon liquids will be collected, treated and discharged. The discharged water would conform to applicable or relevant and appropriate standards. This action would take two years to implement.

ALTERNATIVE VI, ONSITE INCINERATION WITH ULTRAVIOLET/OZONATION - Same remedy as alternative V but using UV/Ozonation as the water treatment system instead of carbon adsorption. It was initially felt UV/Ozonation could be a more cost-effective water treatment alternative. Now it is projected to be similar in effectiveness to Alternative V. This action could take for up to seven years to implement.

D. GROUNDWATER ALTERNATIVES

ALTERNATIVE 1, NO ACTION - Includes only groundwater monitoring. No remedial actions would be implemented to address groundwater contamination. This action would be continued for at least 30 years.

ALTERNATIVE 2, CONTAINMENT - This alternative consists of constructing a soil-bentonite slurry wall barrier to such depth that the wall surrounds the plume. A surface cap would also be constructed to cover the contaminated surface area.

ALTERNATIVE 3, RECOVERY WELLS - MINIMAL PROGRAM - This alternative includes installation of two recovery wells, completed to depths of just below the oil phase. The groundwater treatment system would include an oil-water separator and a carbon adsorption system which would treat the water. The cleanup is estimated to take between 5-10 years.

ALTERNATIVE 4, RECOVERY WELLS - ACCELERATED PROGRAM - This remedy is the same as Alternative 3 but proposes four wells instead of two. The accelerated program reduces cleanup time from 5-10 years to 1-5 years.

ALTERNATIVE 5, FRENCH DRAIN - The french drain and sump would be constructed on the downgradient edge of the plume. At the sump discharge there would be an oil-water separator with a carbon adsorption unit. This method could take up to 30 years. This is expected to be less effective than alternatives 3 and 4 in recovering the oil phase because of the reduced ability to draw down contaminants to the french drain.

E. EVALUATION OF ALTERNATIVES

The degree that the remedial alternatives meet the nine selection criteria described earlier is contained in Table 2. The following symbols were assigned to compare remedial selection criteria:

+ Alternative would exceed a criterion in comparison to other alternatives.

0 Alternative achieves selection criteria.

- Special efforts will be necessary in the design of the remedy to meet the selection criterion.

remedy for reducing the toxicity of these wastes, was given a "-". (Mobility might be reduced with the biotreatment alternative, and so) received a "+". Volume would not reduced since there would be soil addition, thus it received a "-". The thermal destruction alternatives (with carbon adsorption and UV/ Ozonation) were given ratings of "+" due to the complete destruction achieved by these remedies. For both remedies, mobility, toxicity, and volume would be reduced. Thus, all three categories for both alternatives were rated positively.

GROUNDWATER

No action was given a "-" because there would be no reduction of mobility, toxicity, or volume. Containment was given "-" ratings since the fractured subsurface geology would render the slurry walls ineffective for reducing mobility, toxicity, or volume.

The two pump and treat methods were given "+" ratings because they reduce the mobility, toxicity and volume of the plume. The french drain would not be as effective due to the reduced ability to draw the contaminants down to the french drain, thus it was given "0" for all three categories.

3. SHORT TERM EFFECTIVENESS

SOURCE CONTROL

No action leaves contaminated seeps and waste exposed to the public, thus the no action rated "-". The simple containment remedy (Alt. 2) was judged capable of being designed to present essentially no risk to workers or residents. It would reduce direct contact threats but would not address groundwater problems. It received a neutral rating "0". Onsite landfilling was also assigned a "0" because although the handling would require additional attention, standard safety precautions would adequately protect the site workers. Onsite biotreatment was assigned a "-" because of the uncertainty of the ability of this technology to be effective. The on-site thermal treatment options were assigned a single "0" because potential risks can be prevented through careful design and standard safety precautions.

GROUNDWATER

No action and containment received negative ratings ("-"). No action would do nothing to address site risks. Based on the subsurface geology, containment would not be effective. The minimal pump and treat was given a "0" because, although better than the first two alternatives, it is not as effective in the short term as the accelerated program. The accelerated program would be most effective in the short term, thus it received a "+". The french drain alternative received a "0" rating. This alternative would be marginally effective in the short term.

4. LONG TERM EFFECTIVENESS

SOURCE CONTROL

No action will do nothing to reduce long term risks to human health and the environment thus received a rating of "-". Containment is rendered ineffective due to the subsurface geology thus it receives a "-". Onsite landfilling leave the waste in place, the toxicity is not reduced, and the volume is increased, these alternatives therefore each merited a "-". Uncertainties with the ability of biotreatment to treat the site specific wastes lead to a "-". Because of the added assurance of complete destruction of the waste with thermal destruction technology, those remedies were rated "+".

GROUNDWATER

No action would have no long term effectiveness, therefore it received a "-". Containment would be ineffective in the long term due to the fractured subsurface geology, thus it also received a "-". Minimal pumping and treatment will be effective in the long term, thus it received a "+". The accelerated pump and treat program would be the most effective and received a "+". The effectiveness of the french drain system is seriously questionable, thus received a "-".

5. IMPLEMENTABILITY

SOURCE CONTROL

No action alternative is easy to implement, it receives a "+". Containment is implementable, as is the landfill. They both received "0". Biotreatment would require more attention during design than other remedies to ensure implementability (acquiring a waiver to the Land Ban) and was therefore given "-". The thermal destruction alternatives are both implementable, they both received a "0".

GROUNDWATER

No action is easy to implement and received a "+". Containment is implementable and receives a "0". The two pump and treat methods are implementable and received "0". The french drain is not practical to implement because the depth required broaches the current water bearing zone, it received a "-".

6. COST

Estimated costs for each alternative are summarized in Table 2.

7. COMMUNITY ACCEPTANCE

From prior meetings and correspondence, it is evident that local residents want something done about the problem (i.e. not the "no action" remedy). Thermal destruction, without UV/Ozonation, was the

only source control remedy that the community discussed and accelerated pumping and treatment was the only ground water remedy discussed. These were both accepted by the community, therefore they merited a "0". Ratings for all other remedies are left blank.

8. STATE ACCEPTANCE

The State (Arkansas Department of Pollution Control and Ecology) has concurred with the onsite incineration and accelerated pump and treatment for groundwater. These, therefore, received a "+". The other remedies were judged to be less desirable, they receive "0".

9. Overall Protection of Human Health and the Environment

SOURCE CONTROL

Due to the health threat posed by untreated waste remaining on-site, the no action, containment, and landfill alternatives received a rating of "-". The uncertainities associated with biotreatment lead to a rating of "-". The thermal destruction remedies received the highest rating of "+", because they result in elimination of the organic contaminants. The thermal treatment unit would be designed to meet RCRA standards. Destruction of the organic contamination will reduce the potential for human exposure.

GROUNDWATER

No action is not protective and receives a "-". The subsurface geology is fractured such that containment would be rendered ineffective; thus, containment received a "-". The two recovery well programs receive "+" because these are the most effective in addressing the contamination. Since the effectiveness of the french drain is questioned, its protection is questioned. It receives a "-".

V. PROPOSED REMEDY: V. ONSITE THERMAL DESTRUCTION OF CONTAMINATED SOILS, SLUDGES, AND SEDIMENTS and 4. ACCELERATED PUMP AND TREATMENT OF THE GROUNDWATER.

Considering the current and potential site hazards, and also taking into account the unique hydrogeology of the site, EPA selects and ADPCE concurs with the above remedy. This remedy consists of: excavating the contaminated drainageway sediments and surface soils, dewatering the lagoons and removing the sludges, then thermally treating and destroying these wastes. The air emissions of the thermal destruction unit will be monitored to ensure safe operation. The systems will be designed to meet all ARARs. Soils with greater than 1 ppm PCP will be excavated and incinerated. A sampling strategy will be developed during the Remedial Design phase of the project to ensure attainment of this soil cleanup level. Treated water will achieve two cleanup levels: the maximum contaminant level goal of 0.2 mg/l for PCP; the 1×10^{-5} increased cancer risk concentration of 28 ng/l for PNAs. The contaminated groundwater will be pumped and the

oil will be separated from the water. The water will be treated with carbon adsorption and the oil will be recycled if possible. If it is not possible to recycle the groundwater will be pumped and the oil will be separated from the oil it will be thermally destroyed. The "spent" carbon will be disposed of appropriately. The site air and groundwater will be monitored to ensure that an adequate cleanup has been completed.

Rationale

This alternative is protective and cost-effective, and attains applicable or relevant and appropriate Federal and state standards. It utilizes permanent solutions and treatment technologies that reduce contaminant mobility, toxicity, and volume to the maximum extent practicable.

The value of this remedy is three-fold: the acceptance and cooperation of all parties; relatively low cost for permanent treatment; finally thermal destruction would allow for a walk-away remedy.

Cleanup Level

The soils, sludges, and sediments will all be addressed to a level of 1 ppm PCP. This level is derived from the Arkansas Water Quality Regulation # 2, which has been determined to be the most stringent existing regulation. Attached is a letter from ADPCE stating that this regulation has been sufficiently promulgated and consistently enforced. This level is expected to clean the site to a $1x10^{-6}$ incremental cancer risk level. It is planned to excavate at least 13,000 cubic yards of soils, sludges, and sediments. This clean-up level will be verified with periodic sampling during excavation. This sampling scenario will be further delineated in the Remedial Design phase of the project.

The total PCP cleanup level of 1 ppm is sufficiently stringent so that coexisting PNA contaminants will be destroyed to concentrations well below those that present any significant threat to the public health or environment. The PNA clean-up level achieved is expected to exceed cleanup levels at Superfund sites where PNAs are the main contaminant of concern.

The lagoon water and the groundwater will be treated to two clean-up levels: For PCP, a health based goal of 0.2 mg/l, established by the Safe Drinking Water Act; for PNAs the 1×10^{-5} cancer risk level, from EPA's Ambient Water Quality Criteria. It is estimated that 1.07 million gallons of lagoon water and groundwater will have to the pumped and treated. This volume verification will also be outlined in the Remedial Design phase.

The reasons for elimination of the other remedies are as follows:

SOURCE CONTROL

ALTERNATIVE I, NO ACTION - This alternative is not protective of public health and the environment. It meets neither the intent of RCRA nor SARA.

ALTERNATIVE II, CONTAINMENT - Due to the site subsurface geology, a slurry wall, and thus this alternative, is rendered ineffective. The underlying formation is weathered and fractured shale. The cost associated with this alternative is high compared to its level of protection.

ALTERNATIVE III, ONSITE LANDFILL - This remedy is not permanent treatment and is not "walk away". It does not provide long term protection and would require perpetual operation and maintenance. The cost relative to alternative V is high considering the level of protection for the environment and public health offered by Alternative III. Since this is considered regulated waste, compliance with the RCRA Land Disposal Restrictions is required. Use of a landfill violates the Land Ban, therefore this remedy is rejected.

ALTERNATIVE IV, ONSITE BIOLOGICAL DEGRADATION - The effectiveness of this alternative is questioable. Because of the uncertainity associated with this alternative, and the high cost, which includes a contingency for process failure, this alternative was viewed as less attractive than the proposed action. The cost savings is not significant compared to the uncertainity in the technology.

ALTERNATIVE VI, ONSITE THERMAL DESTRUCTION WITH UV/OZONATION - This is the same remedy as Alternative V except the water would be treated with UV/Ozonation instead of carbon adsorption. It was initially thought that UV/Ozonation could be a more effective water treatment alternative; this was, however, found not to be the case. Since the UV/Ozonation costs were estimated to be higher than those for carbon adsorption, the selected alternative is preferred.

GROUNDWATER

ALTERNATIVE 1, NO ACTION - Same as no action above.

ALTERNATIVE 2, CONTAINMENT - Same as containment above.

ALTERNATIVE 3, PUMP AND TREAT, MINIMAL - This is the same as alternative 4, the selected alternative, but at a greater cost and more time since this remedy only utilizes two pumps.

ALTERNATIVE 5, FRENCH DRAIN - Installation may not be practical due to the depth required by the system. This depth is lower than the artesian head of the water bearing zone. This alternative is also less effective at reducing mobility, toxicity, and volume than alternative 4 and it is more expensive.

Consistency with the National Contingency Plan (NCP) and the Provisions of the Superfund Amendments and Reauthorization Act of 1986 (SARA)

The proposed remedy provides adequate protection of public health, welfare, and the environment. This alternative is also consistent with the National Contingency Plan (NCP), in 40 CFR 300.68(H)(2)(iv) and (vi), (Federal Register, 1985) which requires:

(iv) An assessment of each alternative in terms of the extent to which it is expected to effectively mitigate and minimize threats to and provide adequate protection of public health, welfare and the environment.
(vi) An analysis of any adverse environmental impacts, methods for mitigating these impacts, and costs of mitigation.

Additionally, the long-term effectiveness factors cited in SARA Section §121(b)(1) were addressed. These include:

A) The long-term uncertainties associated with land disposal;

B) The goals, objectives, and requirements of the Solid Waste Disposal Act;

C) The persistence, toxicity, mobility, and propensity to bioaccumulate of site hazardous substances and their constituents.

D) Short- and long-term potential for adverse health effects from human exposure;

E) Long-term maintenance cost;

F) The potential for future remedial action costs if the remedial action in question were to fail; and

G) The potential threat to human health and the environment associated with excavation, transportation, and redisposal, or containment.

Operation and Maintenance (O&M)

Site operation and maintenance will include a 1 year groundwater and air monitoring and analysis program.

Future Actions

No future remedial actions are anticipated after completion of the proposed remedy. The selected remedial action is considered permanent. If, however, significant unforeseen off-site contamination occurs as a result of the site, appropriate remedial measures will be taken. As stated under the O&M section, the site will be monitored for 1 year to ensure the reliability of the implemented remedial action.

Remedial Action Schedule

Approve Remedial Action (sign ROD)	March 1988
Complete Enforcement Negotiations	July 1988
Obligate Funds to Begin Remedial Design (assuming the PRPs do not take over)	July 1988
Complete Design	October 1989
Obligate Funds to Start Remedial Action	October 1989
Complete Remediation (Depending on ground water clean-up)	April 1991

TABLE 2

COMPARISON OF REMEDIAL ALTERNATIVES

OLD MIDLAND SUPERFUND SITE

SOURCE CONTROL

ALTERNATIVES	COMPLIES WITH ARARS	REDUCES MOB.	REDUCES TOX.	REDUCES VOL.	EFFECTIVENESS SHORT TERM	EFFECTIVENESS LONG TERM	IMPLEMENT-ABILITY	COST $(MIL)	ACCEPTANCE COMMUNITY	ACCEPTANCE STATE	OVERALL PROTECT'N
I. NO ACTION	-	-	-	-	-	-	+	$0.5	-	-	-
II. CONTAINMENT	0	-	-	-	0	-	0	$3.4		0	-
III. ONSITE LANDFILL	-	0	-	-	0	-	0	$6.0		0	-
IV. ON-SITE BIOLOGICAL TREATMENT	+	-	-	-	-	-	-	$9.5		0	-
V. ON-SITE INCINERATION	+	+	+	+	0	+	0	$10.3	+	+	+
VI. ON-SITE INCINERATION UV/OZONATION	+	+	+	+	0	+	0	$10.8		0	+

TABLE 2 (Continued)

COMPARISON OF REMEDIAL ALTERNATIVES

OLD MIDLAND SUPERFUND SITE

GROUNDWATER

ALTERNATIVES	COMPLIES WITH ARARS	REDUCES			EFFECTIVENESS		IMPLEMENT-ABILITY	COST $(MIL)	ACCEPTANCE		OVERALL PROTECT'N
		MOB.	TOX.	VOL.	SHORT TERM	LONG TERM			COMMUNITY	STATE	
I. NO ACTION	-	-	-	-	-	-	+	$0.5	-	-	-
II. CONTAINMENT	-	-	-	-	-	-	0	$0.5		0	-
III. PUMP & TREAT MINIMAL	+	+	+	+	0	+	0	$1.7		0	+
IV. PUMP & TREAT ACCELERATE	+	+	+	+	+	+	0	$1.4	+	+	+
V. FRENCH DRAIN	-	0	0	0	0	-	-	$2.9		0	-

TABLE 3

SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE ENVIRONMENTAL REQUIREMENTS

STATUTE	REGULATION	REMEDIAL ALTERNATIVES						
		No Action	Containment	Onsite Landfill	Bio-Treatment	Onsite Incineration	Recovery Wells	French Drain
Resource Conservation & Recovery Act (RCRA)	a) Operation of hazardous waste storage/treatment facilities (40 CFR 264)	R	R	R	R	R	R	R
	b) Hazardous waste land disposal ban (40 CFR 268)	NA	NA	R	R	R	NA	NA
	c) Incineration regulations (40 CFR 265)	NA	NA	NA	NA	NA	NA	NA
Clean Water Act	Water quality (40 CFR 19)	NA	R	R	R	R	R	R
Clean Air Act	Emissions to air (40 CFR 53,60,61)	NA	NA	NA	NA	R	NA	NA
Occupational Safety and Health Act (OSHA)	Protection standards for workers (29 CFR 1910)	A	A	A	A	A	A	A

KEY

A - Applicable requirement
R - Relevant and appropriate requirement
NA - Not an ARAR

TABLE 3 (continued)

SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE ENVIRONMENTAL REQUIREMENTS

STATUTE	REGULATION	REMEDIAL ALTERNATIVES						
		No Action	Containment	Onsite Landfill	Bio-Treatment	Onsite Incineration	Recovery Wells	French Drain
Arkansas Water Quality Regulation #2	Protection of Aquatic Life	NA	R	R	R	R	R	R
National Environmental Protection Act	Environmental Impact Survey	NA	R	R	R	R	R	R
Superfund Amendments and Reauthorization Act	National Contingency Plan	A	A	A	A	A	A	A
Hazardous and Solid Waste Act	Land Application of Waste (HSWA 3004M)	NA	NA	R	R	R	R	R

KEY

A - Applicable requirement
R - Relevant and appropriate requirement
NA - Not an ARAR

STATE OF ARKANSAS
DEPARTMENT OF POLLUTION CONTROL AND ECOLOGY
8001 NATIONAL DRIVE, P.O. BOX 9583
LITTLE ROCK, ARKANSAS 72209

PHONE: (501) 562-7444

March 21, 1988

Dr. Allyn M. Davis, Director
Hazardous Waste Management Division (6H)
U.S. EPA, Region VI
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

Dear Dr. Davis:

RE: Old Midland Products Co.
Record of Decision (ROD)

I received the draft ROD for the Old Midland Superfund site under your transmittal letter of February 23, 1988, which requested our concurrence with the proposed remedy. This letter serves notice of our concurrence with the proposed remedy which includes on-site thermal destruction of contaminated soils, sludges, and sediments and accelerated pumping and treatment of the groundwater.

However, one issue which we feel deserves additional investigation regards Comment #2 in the Responsiveness Summary-Section II. As stated in EPA's response, we did perform more sampling to the north of Old Highway 10 and in areas of Keeland Creek above and below the confluence of Keeland Creek and the ditch draining from the site. While the results indicate that the constituents of concern do not exist above the ROD limits of concern, we feel that additional investigation in this area is justified during the Remedial Design Phase. We would propose that remaining funds from the original Remedial Investigation funding allocation be used to further document the existence or nonexistence of significant levels of contaminant migration from the Old Midland site. The funds remaining should be adequate for this purpose and would be implemented concurrently with the Remedial Design Phase.

Should you have any questions in this regard, please call my staff or me at (501) 562-7444. We look forward to the success of this project.

Sincerely,

Paul Means

Paul Means
Director

PM:fw:davismidland

cc: Mike Bates, ADPC&E

Responsiveness Summary

Old Midland Products
Ola, Arkansas

This Community Relations Responsiveness Summary has been prepared to provide written responses to comments submitted regarding the proposed plan of action at the Old Midland Wood Products hazardous waste site. The summary is divided into two sections:

Section I. Background of Community Involvement and Concerns. This section provides a brief history of community interest and concerns raised during the remedial planning activities at the Old Midland site.

Section II. Summary of Major Comments Received. The comments (both oral and written) are summarized and EPA's responses are provided.

I. Background of Community Involvement

In June 1984, the National Campaign Against Toxic Hazards listed the Old Midland Products site as a candidate for Superfund action. Three months later, in September 1984, Representative James Florio of New Jersey listed the Ola site among those he said posed a public hazard. The local press (the Yell County Record and the Dardanelle Post Dispatcher) and the statewide newspapers (the Arkansas Gazette and the Arkansas Democrat) gave some coverage to the events at the site. Compared to other Superfund sites in the State, the coverage was modest.

Community interviews were conducted by the Arkansas Department of Pollution Control and Ecology (ADPC&E) and an approved Community Relations Plan was released in August 1985. On May 8, 1986, ADPC&E held a public meeting at the Ola Community Center. The purpose of the meeting was to announce the start of the remedial investigation. About 35 residents attended and voiced their concerns regarding the lengthy Superfund process and requested that the surface contamination be removed immediately. An information bulletin addressing the citizens' concerns was mailed by EPA shortly after the meeting.

II. Summary of Major Comments Received

The press release and Proposed Plan fact sheet announcing the public comment period and the public meeting was issued on November 16, 1987. The comment period began on November 27 and ended December 31, 1987. A public meeting was held with 20 area residents and local officials on December 9 at the Ola Community Center to explain the results of the remedial investigation and to outline the various alternatives presented in the Feasibility Study. Twenty people from the area attended the meeting, and six residents made oral statements or asked questions. Written comments or questions were received from an additional citizen.

The residents and local officials do not oppose the proposed plan of onsite incineration/carbon adsorption and (accelerated) recovery wells. Several people expressed an interest in a permanent remedy that would allow the site to be reused.

During the public comment period, there were comments/questions regarding the following:

Comment #1:

What is the proposed timetable for the proposed remedy?

EPA response: Once the remedy is selected, the engineering designs or blueprints for the actual remedy will be developed. This is expected to take about 18 months. Estimated time for the groundwater cleanup is from one to five years, due to the uncertainty of the existing conditions and pumping ability. The incineration process should take about 18 months also. Groundwater treatment and incineration would take place simultaneously.

Comment #2

Several years ago, a hard rain and subsequent flood caused water from the site to overflow past the railroad tracks and Old Highway 10 into Keeland Creek. The trees along the creek died. What samples were taken in this area and will it be cleaned up also?

EPA response: Trace amounts of the contaminants from Old Midland were found on the south side of Old Highway 10, and soil samples were taken further north of Old Highway 10. The Arkansas Department of Pollution Control and Ecology has further sampled the area in question.

Based on the comments expressed at the public meeting, additional offsite samples were collected. This sampling event included Keeland Creek all the way down to the Petit Jean Wildlife Management Area. Based on the results of this sampling, there is currently no significant downstream migration.

Comment #3

Was an Environmental Impact Statement prepared as required by the National Environmental Policy Act (NEPA)?

EPA response: Not as a separate document. The Remedial Investigation report, Feasibility Study report and Record of Decision incorporate the NEPA requirements.

Comment #4

Low level toxic chemicals may be present in the discharge water during cleanup and these chemicals could affect the Santa Fe Ridge Waterfowl Area. Because of the higher accumulative retention for ducks and other wildlife, the chemicals could enter the foodchain or endanger the area's habitat. Will EPA monitor the waterfowl and other wildlife during cleanup?

EPA response: No monitoring of the wildlife is planned. The water discharged from the site will be treated to meet drinking water standards which will not pose a threat to area ducks or other wildlife.

Comment #5

The Santa Fe Ridge Waterfowl Area provides habitat needs of wintering waterfowl until nesting migration begins in March, when the impoundment is drained. Will EPA reduce or minimize water discharges into Keeland Creek during the October-March period?

EPA response: It is not anticipated that the amount of water discharged into Keeland Creek will harm the needs of any wildlife.

Comment #6

Can the Dardanelle Library be included as an official repository for the Old Midland site?

EPA response: Yes. Copies of the remedial investigation/feasibility study have been placed in the Dardanelle Library and the library will continue to receive documents regarding Old Midland.

Comment #7

Once the cleanup is completed, can the property be used for production and/or will it be returned to the owners?

EPA response: Site clean-up goals are to reduce contaminant concentration to 1 part per million total pentachlorophenol for the treated surface soils. This is estimated to allow people to participate in any activities on the site for 70 years and have only a 1 in 100,000 chance of contracting cancer.

EPA remedial actions do not consider future land use. EPA has not taken title to the property and has not considered how the property will be used, pending completion of the remedial action. The owners, however are among those "potentially responsible parties" that will be offered the opportunity to execute the chosen remedy under court decree. If EPA and ADPC&E fund the clean-up, those funds can be recovered from the land owners.

Comment #8

Only a small portion of the property is contaminated. Could the "new mill" area which is not contaminated be used now or while the cleanup is in process?

EPA response: No, the "new mill" area is currently projected as the location for the thermal destruction system.

DOCUMENT DATE: 8-1-85
DOCUMENT TYPE: Sampling Analysis Data
ORIGINATOR:
ORIGINATOR AFFILIATION: Spectrix Corporation
RECIPIENT: Pat Hammack, ESD
RECIPIENT AFFILIATION: U.S. Environmental Protection Agency Region VI
DESCRIPTION: Organics Analysis Data Sheets
NUMBER OF PAGES:
DOCUMENT NUMBER:

DOCUMENT DATE: 8-85
DOCUMENT TYPE: Work Plan
ORIGINATOR: Gary Martin, Doice Hughes
ORIGINATOR AFFILIATION: Arkansas Department of Pollution Control & Ecology
RECIPIENT: Jim Peronto
RECIPIENT AFFILIATION: U.S. Environmental Protection Agency Region VI
DESCRIPTION: Final Work Plan for Old Midland Products Co.
NUMBER OF PAGES: 71
DOCUMENT NUMBER:

DOCUMENT DATE: 1-13-86
DOCUMENT TYPE: Sampling Analysis Data
ORIGINATOR:
ORIGINATOR AFFILIATION: R. F. Weston, Inc.
RECIPIENT: Pat Hammack, ESD
RECIPIENT AFFILIATION: U.S. Environmental Protection Agency Region VI
DESCRIPTION: Organic Analysis Data Sheets, Case No. 5445
NUMBER OF PAGES: 223
DOCUMENT NUMBER:

DOCUMENT DATE: 6-5-86
DOCUMENT TYPE: Correspondence
ORIGINATOR: Dick Whittington
ORIGINATOR AFFILIATION: U.S. Environmental Protection Agency Region VI
RECIPIENT: Senator Stanley Ross
RECIPIENT AFFILIATION: Arkansas Senate
DESCRIPTION: Fact Sheet, Cost Proposal, Old Midland Products
NUMBER OF PAGES: 5
DOCUMENT NUMBER:

DOCUMENT DATE: 7-2-86
DOCUMENT TYPE: Intra-Agency
ORIGINATOR: Jim Peronto
ORIGINATOR AFFILIATION: U.S. Environmental Protection Agency Region VI
RECIPIENT: Steve Gilrein
RECIPIENT AFFILIATION: U.S. Environmental Protection Agency Region VI
DESCRIPTION: Record of Meeting - Onsite Audit of Lab
NUMBER OF PAGES: 3
DOCUMENT NUMBER:

DOCUMENT DATE:	7-10-86
DOCUMENT TYPE:	Sampling and Analysis Plan
ORIGINATOR:	Dennis Reece
ORIGINATOR AFFILIATION:	IT Corporation
RECIPIENT:	Gary Martin
RECIPIENT AFFILIATION:	Arkansas Department of Pollution Control and Ecology
DESCRIPTION:	Site Investigation/Feasibility Studies, Old Midland Products Co. Site
NUMBER OF PAGES:	91
DOCUMENT NUMBER:	

DOCUMENT DATE:	7-15-86
DOCUMENT TYPE:	Correspondence - Interagency
ORIGINATOR:	Jim Peronto
ORIGINATOR AFFILIATION:	U.S. Environmental Protection Agency Region VI
RECIPIENT:	Doice Hughes
RECIPIENT AFFILIATION:	Arkansas Department of Pollution Control and Ecology
DESCRIPTION:	Followup Comment on Old Midland Products
NUMBER OF PAGES:	4
DOCUMENT NUMBER:	

DOCUMENT DATE:	9-9-86
DOCUMENT TYPE:	Sampling and Analysis Plan
ORIGINATOR:	Dennis Reece
ORIGINATOR AFFILIATION:	IT Corporation
RECIPIENT:	Gary Martin
RECIPIENT AFFILIATION:	Arkansas Department of Pollution Control and Ecology
DESCRIPTION:	Quality Assurance Project Plan RI/FS
NUMBER OF PAGES:	78
DOCUMENT NUMBER:	

DOCUMENT DATE:	10-87
DOCUMENT TYPE:	Remedial Investigation Report - Vol I of II
ORIGINATOR:	Dennis Reece
ORIGINATOR AFFILIATION:	IT Corporation
RECIPIENT:	Doice Hughes
RECIPIENT AFFILIATION:	Arkansas Department of Pollution Control and Ecology, and U.S. Environmental Protection Agency Region VI
DESCRIPTION:	Final Report, Remedial Investigation, Volume II
NUMBER OF PAGES:	
DOCUMENT NUMBER:	

DOCUMENT DATE:	10-87
DOCUMENT TYPE:	Remedial Investigation Report - Vol II of II
ORIGINATOR:	Dennis Reece
ORIGINATOR AFFILIATION:	IT Corporation
RECIPIENT:	Doice Hughes
RECIPIENT AFFILIATION:	Arkansas Department of Pollution Control and Ecology, and U.S. Enviromental Protection Agency Region VI
DESCRIPTION:	Final Report, Remedial Investigation, Volume 1
NUMBER OF PAGES:	
DOCUMENT NUMBER:	

DOCUMENT DATE:	10-87
DOCUMENT TYPE:	Feasibility Study
ORIGINATOR:	Dennis Reece
ORIGINATOR AFFILIATION:	IT Corporation
RECIPIENT:	Doice Hughes
RECIPIENT AFFILIATION:	Arkansas Department of Pollution Control and Ecology, and U.S. Environmental Protection Agency Region VI
DESCRIPTION:	Final Report, Feasibility Study
NUMBER OF PAGES:	
DOCUMENT NUMBER:	

DFW6H/027